

**Indiana Department of Natural Resources – Division of Forestry**  
**Draft**  
**Resource Management Guide**

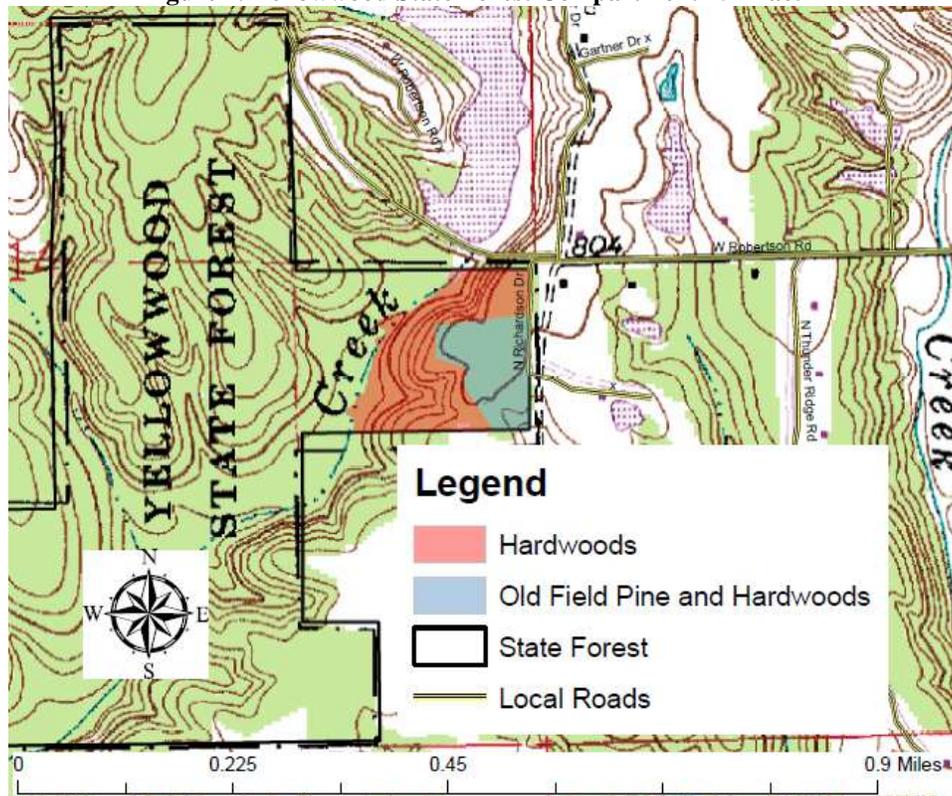
**State Forest:** Yellowwood  
**Tract Acreage:** 17  
**Forester:** Michael Spalding  
**Management Cycle End Year:** 2029

**Compartment 15 Tract 1**  
**Commercial Acreage:** 17  
**Date:** September 2, 2014  
**Management Cycle Length:** 15 years

**Location**

This tract is located in Section 14 of Township 10 North, Range 2 East in Jackson Township of Brown County. The tract's east boundary consists of a portion of West Robertson Road.

**Figure 1. Yellowwood State Forest Compartment 15 Tract 1**



**General Description**

This tract contains approximately 16.6 acres of Hardwood and Pine forested timberland. Most of the acreage contains Mixed Hardwoods and Oak-Hickory cover types that are interspersed. The remaining portion of the tract consists of an oldfield that was planted to Shortleaf Pine which currently consists of a mixture of Shortleaf Pine and native Hardwoods. The timber in this tract is predominantly small to large sawtimber in size with the exception being some old canopy gaps containing poletimber. The overall timber quality of Y1501 is average; however a mixture of low quality and some high quality stems are present. The forest resource species composition is listed below in Table 1 according to their dominance.

**Table 1. Species composition from the May 2014 inventory in Y1501**

<b>Overstory Sawtimber Layer</b>	<b>Understory Poletimber Layer</b>	<b>Regeneration Layer</b>
<b>White Oak</b>	<b>Red Maple</b>	<b>American Beech</b>
<b>Shortleaf Pine</b>	<b>Sugar Maple</b>	<b>Sugar Maple</b>
<b>Red Maple</b>	<b>Pignut Hickory</b>	<b>Red Maple</b>
<i>Sugar Maple</i>	<i>American Beech</i>	<i>White Ash</i>
<i>Yellow Poplar</i>	<i>Sassafras</i>	<i>Sassafras</i>
<i>Northern Red Oak</i>	<i>Yellow Poplar</i>	<i>American Elm</i>
<i>Largetooth Aspen</i>	<i>Blackgum</i>	<i>Black Cherry</i>
<i>American Beech</i>	<i>Red Elm</i>	<i>Blackgum</i>
<i>Black Oak</i>	<i>Black Cherry</i>	<i>Red Elm</i>
<i>Pignut Hickory</i>	<i>Shortleaf Pine</i>	<i>Yellow Poplar</i>
<i>Shagbark Hickory</i>	<i>Largetooth Aspen</i>	
<i>White Ash</i>	<i>White Oak</i>	
<i>Black Walnut</i>	<i>Black Walnut</i>	
<i>Black Cherry</i>	<i>Northern Red Oak</i>	
<i>American Sycamore</i>	<i>White Ash</i>	

**History**

1950’s – Shortleaf/Virginia Pine plantation established for erosion control, date unknown.  
 October 30, 1956 – State of Indiana acquired this land from the US Forest Service.  
 December 1972 – Forester Akard inventoried 13 acres of this tract. 2,815 Board feet per acre harvest stock and 2,401 board feet per acre growing stock.  
 September 1973 – Forester Akard sold 60,220 board feet from Tracts 1 and 3 combined.  
 December 1974 – The Yellowwood crew completed postharvest TSI.  
 May 15, 2014 – Forester Spalding completed 2<sup>nd</sup> forest resource inventory.  
 June 16, 2014 – Tracts 1 and 2 combined. Tract 1 was listed as 13 acres and 2 listed as 5.  
 According to GIS, the combined new tract acreage is approximately 16.6 acres.

**Landscape Context**

The landscape surrounding Y1501 contains much variability as this tract is located in a small outholding compartment of Yellowwood State Forest. There are numerous residences in the immediate landscape with many located around Lake LaSalle to the northeast of the tract. Due to the more gentle topography found in this area, row crop agriculture fields are also more common than in much of Yellowwood. The largest intact block of forest in this fragmented landscape is Compartment 15. Also due to the large amount of private ownership, there are many small private ponds and lakes. The greatest threats to forestland in this landscape will continue to be forest degradation and loss due to clearing of residential home construction and the invasive plants that are routinely introduced during home landscaping efforts.

**Topography, Geology and Hydrology**

Most of Y1501 features gentle topography, including a large flat ridgetop; however, some of the sideslopes are short and steep. The underlying bedrock in this tract is made up of sandstone, siltstone, and shale. Some glacial influence is also present in the tract. Water resources from

Y1501 drain into Dunaway Creek which flows into Beanblossom Creek which empties into Lake Lemon.

### **Soils**

#### Be- Beanblossom Channery Silt Loam, occasionally flooded

This nearly level and gentle sloping, deep, moderately well drained soil is on floodplains, alluvial fans, and colluvial benches. It is fairly well suited to trees. Wet periods contribute to equipment limitations. Rooting depth is restricted for some trees, i.e. Black Walnut, due to coarse fragments in its subsoil. This soil has a site index of 95 for Yellow Poplar.

#### HkD2- Hickory Silt Loam, 12 to 20 percent slopes, eroded

This strongly sloping and moderately steep, deep, well drained soil is on narrow ridgetops and sideslopes in the uplands. It is fairly well suited to trees. Erosion hazards and equipment limitations are the main management concerns due to slopes. Consideration should be given during sale planning and implementation of Best Management Practices for Water Quality. This soil has a site index of 85 for White Oak and 95 for Yellow Poplar.

#### HkF- Hickory Silt Loam, 20 to 70 percent slopes

This moderately steep to very steep, deep, well drained soil is on sideslopes in the uplands. It is well suited to trees. Erosion hazards and equipment limitations are the main management concerns due to slopes. Consideration should be given during sale planning and implementation of Best Management Practices for Water Quality. This soil has a site index of 85 for White Oak and 95 for Yellow Poplar.

#### CnC2- Cincinnati Silt Loam, 6 to 12 percent slopes, eroded

This moderately sloping, deep, well drained soil is on ridgetops and sideslopes in the uplands. It is fairly well suited to trees. This soil has a site index of 80 for Northern Red Oak.

#### RoB2- Rossmoyne Silt Loam, 2 to 6 percent slopes, eroded

This gently sloping, deep, moderately well drained soil is on narrow ridgetops and short, convex sideslopes in the uplands. It is fairly well suited to trees. A fragipan is present at 22 inches that restricts rooting depth. Windthrow hazards and seedling mortality are the main management concerns to be considered when planning management activity. This soil has a site index of 61 for White Oak and 80 for Northern Red Oak.

### **Access**

From Nashville at the intersection of State Road 135 North and State Road 46 travel north 8.0 miles to West Robertson Road. From Morgantown at the intersection of State Road 252 and State Road 135 in Morgantown, travel south 5.0 miles on State Road 135 to West Robertson Road. Travel West on Robertson Road  $\frac{3}{4}$  mile to a 90 degree turn to the left. This is the northeast corner of the tract, and the entrance to the tract is about .1 mile to the south of this turn.

### **Boundary**

The northern and southern boundaries of this tract consist of property lines shared with private landowners and are marked with orange blazes on trees. The orange blazes on the trees face

state ownership. The eastern boundary line is West Robertson road which is a county road. The western boundary is a mapped intermittent stream.

### **Wildlife**

Wildlife resources in Y1501 are abundant. This tract contains habitat suitable for a wide variety of wildlife species. Y1501 has an excellent stocking of Oak and Hickory trees which provide reliable mast crops. Contiguous Oak-Hickory and Mixed Hardwood timberlands also make up the adjacent Yellowwood SF tracts.

A Natural Heritage Database Review was completed for Y1501 on September 2, 2014. If Rare, Threatened or Endangered species (RTE's) were identified near or within this tract, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

The Division of Forestry has instituted procedures for conducting forest resource inventories so that the documentation and analysis of live tree and snag tree densities are examined on a compartment and tract level basis in order to maintain long-term and quality forest habitats. Crown release performed during timber harvests will stimulate the growth of the selected residual trees and will enhance the vigor of these sawtimber trees. Timber Stand Improvement (TSI) following the harvest is planned which will increase standing snag counts. Management practices conducted on Y1501 will be conducted in a manner that will maintain the long-term and quality forest habitats for wildlife populations.

### **Communities**

Y1501 contains several communities. While very small in extent, there are examples of bottomland forest, mesic Mixed Hardwoods, mesic Oaks, and an oldfield that contains a mixture of older, early successional tree species. The Shortleaf Pines that were planted in this tract in the 1950's are not native, but do provide additional wildlife habitat diversity.

### **Exotic Species**

Multiflora Rose is generally present throughout Y1501 in scattered bushes. As Brown County is a known location of the plant virus Rose Rosette disease, populations of Multiflora Rose are relatively stable. Multiflora Rose was the only invasive plant observed during the recent tract inventory however management efforts at this time are only monitoring its spread. Control measures may be warranted if its populations occur in planned regeneration openings.

### **Recreation**

Public access is easily available to this tract. While there are not currently graveled parking lots, hunting for mushrooms, turkey, and deer are all likely very popular activities within Y1501 given the close proximity to State Road 135. The numerous private adjacent residences are likely recreational visitors.

### **Cultural**

All portions of Y1501 were reviewed for cultural sites during the forest resource inventory. Cultural resources may be present on Y1501 but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

## Y1501 Tract Summary Data from the May 2014 Inventory

Total Trees per Acre = **193**

Overall Percent Stocking = **106%**

Basal Area per Acre = **125.2 Square Feet**

Sawtimber & Quality Trees per Acre = **41**

Present Volume = **10,582 Board Feet per Acre**

	Acres		Sq. Ft. per Acre
Hardwood Commercial Forest:	5.5	Basal Area Sawtimber:	72.9
Pine Commercial Forest:	11.1	Basal Area Quality:	11.8
Noncommercial Forest:	0	Basal Area Prime:	5.3
		Basal Area Poles:	30.0
		Basal Area Culls:	2.9
		Sub-merchantable:	2.3
<b>Total:</b>	<b>16.6</b>	<b>Total Basal Area:</b>	<b>125.2</b>

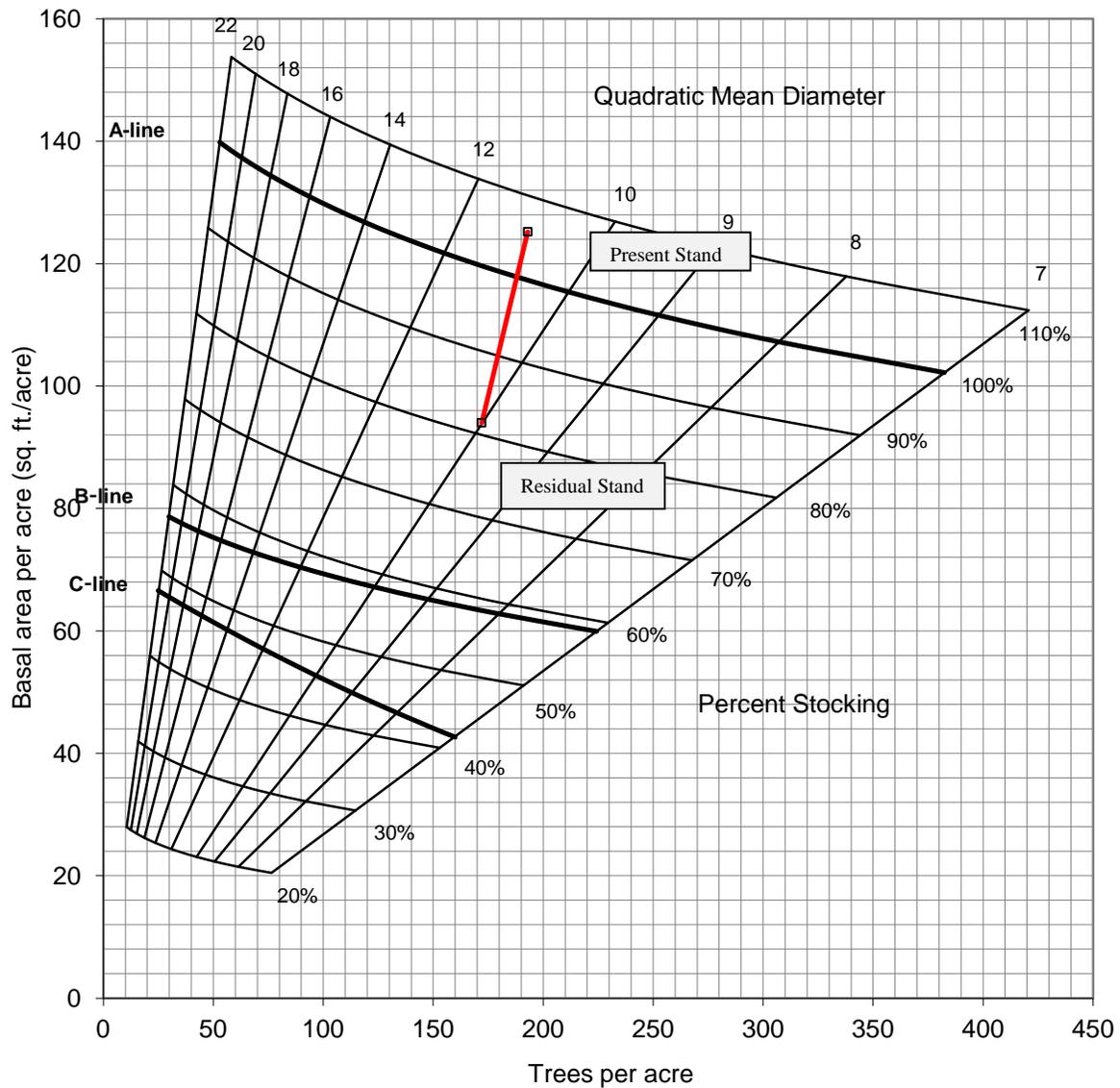
### Tract Subdivision Description and Silvicultural Prescription

The latest inventory in Y1501 was completed on May 15, 2014 by forester Michael Spalding. 17 prism points were completed over the 16.6 actual acres in the tract (1 point per acre). A summary of the forest resource inventory is provided above and a Gingrich Stand and Stock table is provided below in Table 2. Currently Y1501 is overstocked and a timber harvest is prescribed. Singletree selections to thin and release desirable croptrees and to remove suppressed and poorly formed individual trees are prescribed in an improvement cutting. Group selections may be prescribed to regenerate areas where aggregations of poor stocking, excessive damage, or over maturity are found. For the current management cycle Y1501 was segregated into 2 Management Stratum based on the tract's two general cover types.

#### Mixed Hardwood Stratum

This cover type is quite variable within Y1501 as there is a great diversity in the tract's past history, aspect, and soils that are present. White Oak, Northern Red Oak, Black Oak, Sugar Maple, Pignut and Shagbark Hickories, American Beech, and Yellow-Poplar are the primary overstory species. American Beech in a wide array of poletimber sizes dominates this Stratum's understory. Some small pockets of Oak-Hickory are present throughout this Stratum but are not large enough to map as a separate cover type. The size of the timber resources in this Stratum ranges from pole to very large sawtimber. The quality, especially of many of the Oak species, is quite good. This Stratum would greatly benefit from primarily singletree selection harvesting along with some small group selection openings. Areas of mature, over-mature, damaged, and declining trees should be marked for group selection regeneration. It is expected that these openings will regenerate to Mixed Hardwoods dominated in the future by Yellow Poplar due to the mesic site and favorable sites. Other portions of this Stratum should be marked for singletree harvesting to favor the retention of the valued Oak and Hickory trees within this Mixed Hardwoods cover type. Trees targeted for removal should include the following: all merchantable, accessible Ash; Sugar Maple with evidence of Maple Borer damage; declining, drought-stressed, mature, and over-mature Yellow-Poplar, and any other stems needed to release higher quality, vigorous residual trees. The presence and noted movements of the Emerald Ash borer in nearby sections warrants a sanitation harvest of this species in this tract to reduce and slow its spread.

**Table 2. Gingrich Stand and Stock Table for Y1501 in May 2014**



**Oldfield Pine Plantation/Hardwood Stratum**

Shortleaf Pine is the most common Pine species in this Stratum. While it did not fall in any inventory plots, Virginia Pine was also observed here. Hardwood species inventoried in this Stratum are those that naturally succeed into old field forested areas such as Yellow Poplar, Red Maple, Largetooth Aspen, Black Cherry, and White Ash. American Beech also dominates in this Stratum's understory. This Stratum contains pole to large sawtimber sized trees. Some of the Shortleaf Pine are of very good quality, however most are of lower grade. The Red Maple stems appear to have the poorest quality of the trees within this Stratum with many weak forks and poor form. The droughts of recent years and Yellow Poplar scale have led to decline in many of the Yellow Poplar trees. Emerald Ash Borers are present in land nearby to this tract and this species will be included in the proposed harvest. Ordinarily timberlands with these combinations of species and low grade features would be ideal for larger prescribed regeneration openings due to the non-native Shortleaf Pine, poor quality Red Maple, mature Yellow-Poplar, White Ash, and

the short-lived Largetooth Aspen. However, due to the small tract size, the proximity of the tract to the county road, and the vigor of the Pine, this area will primarily receive singletree selection for this management cycle. Some regeneration openings are planned to be marked in areas with declining and mature Yellow Poplar, White Ash, poor quality Red Maple, and Largetooth Aspen.

**Table 3. Volume estimates from May 2014 inventory on Y1501**

<b>Species</b>	<b>Total</b>
White Oak	47,330
Shortleaf Pine	42,540
Red Maple	16,800
Northern Red Oak	14,340
Yellow-Poplar	11,380
Sugar Maple	10,680
Largetooth Aspen	7,050
White Ash	5,550
Pignut Hickory	5,240
Black Oak	4,230
American Beech	3,460
Shagbark Hickory	2,350
Black Cherry	1,790
Black Walnut	1,560
American Sycamore	1,370
<b>Total</b>	<b>175,670</b>

### **Summary Tract Silvicultural Prescription and Proposed Activities**

The overall silvicultural prescription for Y1501 is a combined improvement cutting and group selection harvest. The use of the Division of Forestry’s BMP regulations will minimize soil erosion and protect water quality. Prompt installation of water diversions in conjunction with seed and straw following harvesting will be employed to minimize any effects to neighboring water resources. The harvest will entail both singletree and group selection cutting methods. Singletree selection will remove poorly formed, mature stems, and improve spacing of residual trees to increase the growth of the residual stand. Group selections may be prescribed in aggregations of inadequate stocking, poor quality, low grade Pine, or mature timber. A preharvest wild grapevine control project is planned prior to the proposed timber sale.

Portions of or all of Y1501 will be submitted for a postharvest Timber Stand Improvement (TSI) project. This will consist of completing regeneration openings and croptree release in other portions of the tract as well as in needed treatments in older openings. Invasive work will also be prescribed if deemed appropriate by the administering forester. A field review for regeneration opening success is planned 3-4 years after opening TSI completion.

Given the recent inventory and growth of Y1501’s forest resources, this tract is suitable for a 15 year management cycle wherein growth and development of the tract’s forest resource is evaluated by a forest inventory every 15 years. The current inventory indicates a possible harvest of between 40 to

60 MBF. A timber sale is proposed for FY2015-16 and will be combined with a sale in the adjacent Tract Y1505.

**Proposed Activities Listing**

Proposed Management Activity

Proposed Date

Archeological Clearance

CY 2015

Roadwork Improvement

CY 2015-16

Timber Marking & Preharvest Grapevine control

CY 2015-16

Timber Sale

FY 2015-16

Postharvest TSI

CY 2016-17

Regeneration Opening Review

Within 3-4 years of

Postharvest TSI

Reinventory and Management Guide

CY 2030

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You must indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered. Note: Some graphics may distort due to compression.